[0064] If employing the physical absorption method, the CO_2 recovery part **21** is, for example, configured as a container containing methanol. By making the gas containing CO_2 flow into the methanol contained in this container, CO_2 is absorbed at the methanol.

[0065] The chemical absorption method is the method of bringing an absorption solution able to selectively dissolve CO_2 (for example, an amine or potassium carbonate aqueous solution) into contact with the gas containing CO_2 to make the CO_2 be absorbed by the absorption solution by a chemical reaction and of heating the absorption solution so as to make the CO_2 disassociate from the absorption solution for recovery.

[0066] If employing the chemical absorption method, the CO_2 recovery part **21** is, for example, configured as a container containing an amine By making the gas containing CO_2 flow into the amine contained in this container, CO_2 is absorbed at the amine.

[0067] In the present embodiment, the CO_2 recovery part **21** employing the physical adsorption method as the method of recovery of CO_2 in the exhaust is used. Therefore, the CO_2 recovery part **21** is configured as a container containing pellet-shaped zeolite.

[0068] The suction pump **22** is provided at the exhaust passage **25** communicated with the CO_2 recovery part **21**. The suction pump **22** is arranged at the downstream side of the CO_2 recovery part **21** in the direction of flow of the exhaust gas.

[0069] The suction pump **22** is configured so as to use electric power of the battery **50** to suck out gas from the exhaust pipe **13** through the communicating path **24** and forcibly send the gas to the CO_2 recovery part **21**. Further, the suction pump **22** is configured so as to discharge the sucked gas into the atmosphere. In the present embodiment, the suction pump **22** is, for example, an electric pump configured so that the discharge capacity can be changed steplessly by adjustment of the electric power supplied from the battery **50**. If the output of the suction pump **22** becomes greater, the flow rate of gas flowing through the CO_2 recovery part **21** becomes greater.

[0070] The cooling part **23** is provided at the communicating path **24**. The cooling part **23** is communicated with the CO_2 recovery part **21** through the communicating path **24**. Therefore, the cooling part **23** is arranged at an upstream side of the CO_2 recovery part **21** in the direction of flow of the exhaust gas. As a result, the gas cooled at the cooling part **23** flows into the CO_2 recovery part **21** through the communicating path **24**.

[0071] The cooling part **23** is configured to use the electric power of the battery **50** to cool the CO_2 recovery part **21**. For example, the cooling part **23** is configured to use the electric power of the battery **50** to cool the exhaust gas flowing through the communicating path **24**. Specifically, the cooling part **23** is configured to use the electric power of the battery **50** to cool the exhaust gas flowing into the cooling part **23** down to the target temperature and make the cooled exhaust gas flow into the CO_2 recovery part **21**. The cooling part **23**, for example, is configured as a refrigeration circuit provided with a compressor, condenser, expansion valve, and evaporator. At the cooling part **23**, a refrigeration cycle is realized by refrigerant circulating through these components. In particular, the evaporator exchanges heat with the exhaust gas flowing through the communicating path **24** directly or indirectly through a medium, and cools such exhaust gas. The refrigerant in the refrigeration circuit falls to a temperature lower than the temperature of the atmosphere, therefore, in the present embodiment, the cooling part **23** can lower the temperature of the exhaust gas flowing into the cooling part **23** to a temperature lower than the temperature of the atmosphere (ordinary temperature).

[0072] Note that, the cooling part **23** does not necessarily have to be configured as a refrigeration circuit. The cooling part **23** may be configured in any way so long as able to cool the exhaust gas flowing through the communicating path **24**. Therefore, for example, the cooling part **23** may also be configured to have a radiator of the vehicle **1** and to use the cooling solution cooled by the radiator to cool the exhaust gas flowing through the communicating path **24**. Further, the cooling part **23** may be configured to be arranged around the CO_2 recovery part **21** to cool the CO_2 recovery part **21**.

[0073] Configuration of Control Device

[0074] The control device **30** is provided with an ECU **31** configured from a digital computer. Further, the control device **30** is provided with various sensors detecting values of various types of parameters required for controlling the internal combustion engine **10** and CO_2 recovery device **20**, and an HMI **42** providing information to the user and receiving input from the user. Specifically, the control device **30** is provided with a water temperature sensor **43** and positioning sensor **44** as sensors.

[0075] The ECU **31** is provided with a RAM (random access memory), a ROM (read only memory), or other memory, a CPU (microprocessor), an input port, and an output port, which are connected with each other through a bidirectional bus. The input port and output port of the ECU **31** are connected to various actuators and various sensors, etc., of the internal combustion engine **10**.

[0076] The input port of the ECU **31** is connected to various sensors and the HMI **42**, etc. The output signals of various sensors and the HMI **42**, etc., are input to the input port. Further, the output port of the ECU **31** outputs control signals to the various actuators of the internal combustion engine **10** and CO_2 recovery device **20**, and to the HMI **42** etc. Therefore, the various actuators of the internal combustion engine **10**, the CO_2 recovery device **20**, and the HMI **42** are controlled by the ECU **31**. The ECU **31** configures the control device of the CO_2 recovery device **20** according to the present embodiment.

[0077] FIG. **2** is a functional block diagram of the ECU **31**. As shown in FIG. **2**, in the present embodiment, the ECU **31** is provided with the recovery control part **32** and display control part **33** as functional modules. In the present embodiment, the ECU **31** functions as a recovery control part **32** and display control part **33** by running programs stored in the memory, etc.

[0078] The recovery control part **32** performs the overall control in the CO_2 recovery device **20**. For example, the recovery control part **32** can control the discharge capacity and start and stopping of suction at the suction pump **22**, and the cooling temperature and start and stopping of cooling at the cooling part **23**, etc.

[0079] The display control part **33** performs the overall control in the HMI **42**. For example, the display control part **33** displays an indicator showing if the CO_2 recovery device **20** is operating or stopped, a user interface screen for receiving user input, etc., through the HMI **42**.

[0080] The HMI **42** is an interface for input and output of information between the user and ECU **31**. The HMI **42**, for